

## A CRITICAL REVIEW OF A RECENT SERIES OF OPERATIONS UPON THE STOMACH.\*

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IN a paper read before the Hartford Medical Society one year ago, entitled "The Surgical Treatment of Chronic Dyspepsia," the writer reviewed the subject of gastric surgery, spoke of the evolution of our modern methods and technic, quoted the most recent statistics from many of the best European and American clinics, and among other conclusions stated that the "indications for treatment in benign lesions of the stomach are:

"First, Intelligent medical treatment in all primary cases of simple round ulcer. If unrelieved after six weeks of this treatment, operation should be advised.

"Second, Operation in all cases of indurated chronic ulcer, and in all cases of recurrent symptoms after a primary cure.

"Third, Operation in all cases of pyloric stenosis, excepting those due to gummatous infiltration."

Undoubtedly the most brilliant results have been obtained in cases of chronic indurated ulcer and benign stenosis of the pylorus, and these contrast so strikingly with the almost universal failures which followed the dietetic and medical treatment of these conditions, that to-day the great majority of intelligent medical practitioners advise operation in those suffering from these lesions.

The honest enthusiasm which naturally follows great achievements in a new field of surgical endeavor, almost always results in the pendulum swinging too far, and the application of surgical therapeutics to unsuitable cases, or to those in which the diagnosis is not accurately established.

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I myself must plead guilty to some of these therapeutic transgressions, and it is my purpose this evening to report a recent series of operations upon the stomach for presumably benign lesions, in which several errors in judgment are to be recorded. It is my hope that by a candid analysis of these cases, and by suggestions which I may glean from your discussion, I shall be able to avoid these errors in the future.

During the past twelve months the writer has performed 16 operations for symptoms thought to be due to chronic gastric ulcer or benign pyloric stenosis. One other case will be included in this series, which occurred in the writer's service but was operated upon by another surgeon, making 17 in all.

In reviewing the histories of these cases I have been struck with the fact of a rather large percentage of failures to relieve the symptoms from which the patient sought relief—much larger, in fact, than in any previous year. Whether these failures have been due to faulty technic, to bad judgment in the selection of cases, or to errors in diagnosis, I will leave for my hearers to decide.

For convenience I shall divide the cases into two groups, those in which a definite anatomical lesion was demonstrated, and those in which no lesion was found. In the first group there are 12 cases, of which 11 recovered and were immediately relieved of their symptoms, and 1 died on the sixth day from pneumonia. Of the 11 which were immediately relieved of their symptoms, 9 are known to have remained well, 1 died six months later, probably of malignant disease, and 1 other continues to suffer and has lost weight. Of the 5 cases in which no lesion was found at operation, 1 was immediately relieved of an hysterical pseudo-tetany, 1 died from persistent vomiting, 1 continued to suffer from the gastric crises of locomotor ataxia, and 2 from symptoms which could only be classified as a gastric neurosis.

Of the twelve patients in Group I:

CASE I.—Was that of an unmarried woman forty-three years of age, referred by Dr. Robert C. Kemp. Two years before admis-

sion she suffered from epigastric pain after taking food, acid eructations, sour vomiting, with rapid loss of flesh and strength. An ulcer cure, consisting of rest, rectal feeding, careful regulation of the diet and appropriate medication, resulted in a complete relief of symptoms for more than a year. The symptoms, however, finally recurred with great severity; extreme agonizing pain, persistent vomiting and a loss of over fifty pounds in weight. The diagnosis of open gastric ulcer was confirmed by repeated gastric analyses. Gastro-enterostomy, short-loop suture method, was followed by immediate relief. Patient gained rapidly in weight (16 pounds in one week) and has since been able to digest without pain or discomfort all kinds of solid food. Total gain in weight in one year, 104 pounds.

CASE II.—Was that of an unmarried female fifty years of age. Painful digestion, sour stomach and occasional vomiting for three years. Six months before admission the vomiting became more frequent and often contained food taken several days before. Rapid loss of flesh and strength. Exploratory operation in a neighboring city; diagnosis, pyloric cancer, abdomen closed. She continued to vomit everything taken into the stomach, became extremely emaciated, weak and anæmic. Gastric analysis showed only evidences of dilatation and stasis. At operation, a large inflammatory induration around pylorus was found. Gastro-enterostomy, short-loop suture method. No reaction following operation. Liquid food on second day, solid food at the end of ten days, with no pain or discomfort. A recent communication states that she has gained 40 pounds and is in perfect health.

CASE III.—A man forty-nine years of age. Dyspepsia ten years ago, lasting one year. Symptoms of open ulcer three years ago, with a gradually developing pyloric stenosis. Has suffered extreme pain at times, and has gradually eliminated all solid food from his diet. For past four months has subsisted only on milk. Of late the vomiting has been daily and often copious. A meal of scraped meat and bread caused agonizing pain for five or six hours. Gastric analysis suggested stasis and open ulcer. Loss of 40 pounds in weight. Gastro-enterostomy. Complete relief of symptoms. In three weeks the patient was able to eat solid food, including meat, fish, bread, vegetables, tea, coffee, etc. Later report states that he is now perfectly well—has gained 10 pounds.

CASE IV.—Male, twenty-four years of age. Dyspepsia for six months. Symptoms consisted of epigastric pain and burning after taking food, occasional sour vomiting and acid eructations. Loss of 25 pounds in weight. Gastric analysis indicated high acidity. No stenosis. Gastro-enterostomy, followed by immediate relief of symptoms. Later report: Health good; digestion perfect; gain of 25 pounds in weight.

CASE V.—Female, thirty-five years of age. Duration of symptoms three years. Pain after eating, marked burning sensation and tenderness at epigastrium, some vomiting, loss of weight, hæmatemesis. Gastric analysis showed moderate hyperchlorhydria. Gastro-enterostomy; indurated pyloric ulcer found. Prompt operative recovery, marked improvement in symptoms. A later report, however, shows that the symptoms have returned and that the patient is losing ground. Physical examination reveals a large, hard epigastric tumor. Patient advised to re-enter hospital for observation.\*

CASE VI.—Male, twenty-eight years of age. Hard drinker. Three years ago symptoms of alcoholic gastritis, morning vomiting, etc. Later, symptoms of open ulcer, pain, some vomiting and heartburn. For past six months symptoms of pyloric stenosis, frequent vomiting of food taken day or days before. Gastric analysis showed stasis and fermentation. Loss of weight and strength. On operation, pylorus found angulated and closely adherent to liver by dense adhesions. When these were divided the stomach dropped into place and the pylorus seemed normal in size. Immediate relief of vomiting. Patient discharged on eighteenth day able to eat solid food with comfort. Later report: Gain of 25 pounds; digestion perfect.

CASE VII.—Male, fifty years of age. Dyspepsia for six years. At first pain, sour stomach, heartburn and occasional vomiting with relief of pain. For past year vomiting more frequent, rapid loss of weight and strength. Gastric analysis showed marked hyperchlorhydria. On operation, pylorus found indurated and adherent to pancreas. Gastro-enterostomy, with immediate relief of symptoms. Later report: Excellent health; gained 25 pounds.

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\* This patient entered hospital and was observed for several days—gastric analysis shows complete absence of hydrochloric acid after a test meal. Is now undergoing treatment by tripsin. Diagnosis, carcinoma.

CASE VIII.—Male, twenty-seven years of age. Seven years ago severe dyspepsia lasting one year. Then a period of four years elapsed without symptoms. Two years ago a return of dyspeptic symptoms with epigastric pain and tenderness. Ten months ago severe hæmatemesis. Treated in medical division of Roosevelt Hospital with marked relief. Five months later a second hæmatemesis, less severe. This was followed by a return of his digestive symptoms, chiefly pain. Gastric analysis showed high percentage of free hydrochloric acid. On operation, stomach so bound down by adhesions that suture operation could not be performed. Posterior gastro-enterostomy by Murphy button. Complete relief of pain. Discharged in twenty-two days, eating solid food without discomfort. Later report: Patient is working every day; has had no vomiting or hæmorrhage; still has pain after solid food.

CASE IX.—Female, forty-three years of age. Duration of symptoms only a few weeks. Complained of severe epigastric pain with fever and vomiting. Later, pain became less severe, but vomiting continued. Treated in medical division of hospital for several weeks. Vomiting continued. Referred to surgical division for exploratory operation. On opening abdomen, large inflammatory induration of first portion of duodenum found. Gastro-enterostomy; immediate relief of pain and vomiting. Was later able to take and retain all kinds of food. Left hospital on nineteenth day after operation. Later report: Health excellent; no pain or vomiting since operation.

CASE X.—Male, thirty-two years of age. Four years ago had sudden severe pain in epigastric region. This was followed by severe dyspepsia for two and one-half years. The pain was more marked one or two hours after taking food. Marked relief when he would starve himself. Vomiting of sour material would generally relieve pain. On two occasions he has vomited blood and passed black stools. From January, 1905, until July, 1906, was free from symptoms. For past four months experienced a return of the pain and vomiting, with loss of weight and strength. Gastric analysis shows hyperacidity. On operation, pylorus was thickened and surrounded by dense adhesions. Gastro-enterostomy was followed by marked relief. Patient left hospital on twentieth day able to eat solid food without discomfort. Later report indicates complete return to health.

CASE XI.—Male, thirty-seven years of age. History of gastric ulcer confirmed by gastric analysis. Apparently relieved by Leubé ulcer cure. Return of symptoms, for which second cure was recommended. During this treatment patient became gradually weaker and progressively anæmic. At first traces of occult blood in stools, then blood in larger quantities, and finally the entire fæcal discharge would appear dark and at times tarry. No gastric analysis made at this time. Operation revealed large indurated area along lesser curvature, strongly suggesting carcinoma. Gastro-enterostomy. Patient was starved for forty-eight hours and then given water for four or five days, finally broth and solid food. Stools frequently examined, no blood found at any time subsequent to operation. Marked improvement in appearance. Hæmoglobin increased from 45 to 70 per cent. Patient remained in hospital fifty-seven days and was discharged able to take solid food in abundance without any discomfort. A few weeks after leaving the hospital the patient began to lose appetite and strength; later, digestive trouble appeared. A diagnosis of tuberculosis of the stomach was suggested by an eminent specialist. He died six months later of symptoms strongly suggesting malignant disease.

CASE XII.—Woman, forty-five years of age. Three years ago began to have symptoms of open ulcer, pain, some vomiting, belching of gas, etc. The attacks would come on and last for a variable period. For last years the pain has been growing worse and the vomiting more profuse. Loss of 40 pounds in weight. Gastric analysis shows marked hyperchlorhydria. Operation showed old scars near pylorus. Gastro-enterostomy. Hæmatemesis immediately after operation. On fourth day lobar pneumonia developed; death on sixth day.

It will thus be seen that in all cases in Group I a definite anatomical lesion was present, and in each case the operation was clearly indicated. In all of the gastro-enterostomy cases, the posterior no-loop operation was performed, and in ten of the twelve the suture method was followed. In no instance was there any evidence of functional disturbance due to the side-tracking of the duodenum. In no case was there any evidence of sepsis or peritoneal irritation, and none of the cases showed

post-operative shock. In the only fatal case of the series a severe hæmorrhage occurred in the stomach immediately after the operation and gave rise to frequent vomiting of fluid blood and clots. This, however, soon ceased, and although there was a rise of temperature to 102 degrees the night following the operation, it gradually fell to normal. On the fourth day, after the patient had rallied from the hæmorrhage and was taking liquid food, she developed a lobar pneumonia of an extremely toxic type, and died in forty-eight hours. At no time was there any sign of peritoneal irritation or interference with the functional success of the anastomosis, as she took and retained, during the last three days, liquid food in abundance.

At first I was at a loss to account for the hæmorrhage, but after conferring with my house staff, I am inclined to think that in making the anastomosis the site of the jejunal opening was not, as it should be, immediately opposite the mesenteric border where the vessels are small and easily controlled by the lock stitch, but on one side nearer the mesentery, for I distinctly recall that after removal of the clamps, there was considerable oozing from the last line of sutures, which was with considerable difficulty controlled. This hæmorrhage undoubtedly weakened the patient, and lowered her normal resistance to the pneumococcus infection.

In Case XI the patient that died six months after operation of tuberculosis or cancer, we were unable to arrive at any accurate diagnosis during life. Had the patient been in better condition, we would undoubtedly have removed a small portion of the indurated mass for microscopical examination, but as his condition was critical in the extreme from prolonged hæmorrhage, we felt the necessity of avoiding any procedure which would prolong the operation. The case illustrates very forcibly the remarkable effect which rapid emptying of the stomach had upon an ulcerative process of unusual virulence.

We now come to the consideration of Group II, in which no definite lesions were found at operation.

CASE I was that of a spare, neurotic man, fifty-seven years of age, who had suffered for many years from chronic dyspeptic symptoms. Operated on for gall-stones one and one-half years ago; no relief. Now complains of loss of appetite and sense of weight at epigastrium after taking food, sour eructations, belching of gas and obstinate constipation. He often feels a movable hard lump in epigastric region, which he insists is growing larger. This, however, was not verified by our examination. Gastric analysis after a test meal showed total acidity to be 123, free hydrochloric acid 84. Abdomen opened, no definite lesion found, only a slight thickening at pylorus. Posterior gastro-enterostomy. No reaction. No discomfort until he began to take liquid food. He then began to vomit, at first only the food taken, later the vomiting became frequent of large quantities of dilute gastric juice and mucus, and finally intestinal matter. Pulse and temperature remained normal, abdomen flat, no tenderness or rigidity. About the fourteenth day after operation the patient's condition became so critical that the abdomen was reopened. There was no peritonitis, the anastomosis was perfect, the duodenum was not dilated. Abdomen closed, the vomiting continued until death from exhaustion three or four days later.

CASE II was that of a female thirty-one years of age, who gave a distinct history of ulcer in early life, which was apparently cured. For past three years she suffered from digestive disturbances of various kinds, resulting in frequent attacks of nausea and vomiting with pains in the epigastrium and in the left inguinal regions. Operated upon one and one-half years ago for uterine prolapse. For past two months she has lost weight, had severe pain after eating, belching of gas, and frequent attacks of sour vomiting. Gastric analysis showed on two occasions no free hydrochloric acid after a test meal, once it was 24, and again only 9. There was distinct epigastric tenderness. Loss of weight 15 pounds in eight weeks. The patient had been under a severe mental strain, and was decidedly neurotic.

After two consultations it was decided to make an exploratory operation, as she was evidently losing ground. On opening the abdomen nothing abnormal was found, but the symptoms so strongly suggested ulcer that a gastro-enterostomy was performed. During her convalescence, which was uneventful, she

seemed much more comfortable. While on a limited quantity of liquid food she did not vomit and had little pain. As soon as she left the hospital, however, all the old symptoms returned with even greater intensity. She became depressed, lost weight and strength, and was obliged to limit her diet to a few simple articles of food; and even then she had frequent attacks of prolonged and exhaustive vomiting with pain on the left side, extending from the costal border to the groin. Ten months after leaving the hospital she was readmitted for observation and further treatment, as her symptoms suggested a vicious circle.

During three weeks she was kept in bed and carefully observed. At no time was there any bilious vomiting. She would often reject her food shortly after swallowing it, and at other times would go several days without vomiting. A full meal of solid food would often be retained and digested without discomfort, and again small quantities of broth or farina would be immediately rejected with great quantities of gas and pain. Several test meals were given and expressed at varying intervals. The result of these investigations showed that the stomach emptied itself promptly and that there was no marked hyperchlorhydria. There is apparently a tendency toward gastrosuccorhea, as on one occasion after a fairly full meal at bed time, nearly a pint of gastric juice and mucus was removed in the early morning, but with no bile or food remnants. The patient has alternating periods of mental elation and depression. It is chiefly during the latter that she vomits and complains of pain. On the whole, she was somewhat benefitted by her stay in the hospital. She was seen in consultation by Dr. James, who, after a careful review of the history, agreed with the writer that the case was probably one of a gastric neurosis which had been made worse rather than better by operation.

CASE III.—A man, forty years of age, complained of severe pain in the epigastric region, with tenderness and frequent vomiting. These symptoms first appeared five months before admission, but were relieved by internal treatment. Later the symptoms recurred with great severity and at one time he vomited a large amount of black coffee-grounds material. The pain was increased by taking food and would often be relieved by vomiting. Has lost 10 pounds in weight. Gastric analysis showed nothing abnormal. He was seen by a number of the staff of the hospital.

It was thought by some that a mass was felt in the region of the pylorus. The severity of the symptoms led to an exploratory incision. Nothing abnormal was found, but a posterior gastro-enterostomy was performed. The convalescence from the operation was uneventful, but there was practically no change in the symptoms, which were undoubtedly the gastric crises of a locomotor ataxia.

CASE IV.—An emaciated neurotic female, twenty years of age, was transferred to the surgical division of the Roosevelt Hospital, after the medical department has exhausted every resource at their command in an attempt to check or lessen a prolonged period of persistent vomiting. Three months before admission she began to complain of pain after eating, which was followed by vomiting. The symptoms increased in severity. She was obliged to subsist upon liquid diet. Later, the vomiting would occur as soon as any food was taken. She lost strength and flesh rapidly, was constipated and suffered from constant headache. Gastric analysis showed a slight increase in the amount of free hydrochloric acid. Loss of weight 41 pounds in three months.

Upon opening the abdomen nothing abnormal was found, but a gastro-enterostomy was performed in the hope that the symptoms were due to ulcer, and would be relieved by stomach drainage. The operation was easily and quickly performed and she had no untoward symptoms until the following day, when there occurred a rather copious hæmorrhage from the cutaneous wound. This was repeated two or three days later and very much alarmed the patient. Prior to this last hæmorrhage, there had been very little vomiting, although she had taken water and a little milk. After the hæmorrhage, however, she lost heart, said she would surely die, whined and cried day and night, and made no effort to help herself in any way. She vomited at least three-quarters of the food taken and on several occasions flatly refused nourishment. In spite of all these unfavorable factors she made a satisfactory operative recovery, and gradually began to retain a part of the food taken. Every effort was made by the house staff and nurses to induce her to take nourishing food, but much of it had to be administered by force under protest.

About three weeks after the operation she ceased to vomit regularly and would retain the greater portion of the food. The epigastric pain ceased. she said her stomach gave her no trouble.

but she had a pain which extended from the left side of the occiput to the heart and womb. She was obstinately constipated, and as we were obliged to resort to frequent enemata, there occurred a prolapse of the rectum which added to her distress of mind and more than ever convinced her that she was about to die. At present she presents the picture of an utterly wretched and hopeless hypochondriac, although it is only fair to say that for the present at least, the symptoms for which she was operated upon—pain, vomiting and progressive emaciation—have been relieved. I firmly believe, however, that the case was one of a very grave neurosis, which following the operation has manifested itself by other symptoms.

CASE V.—A well nourished man of thirty-five years. Four years ago, while serving in the Philippines, he noticed cramps in the legs after standing for a long time in the rain. These cramps were painful, but were relieved by stamping the feet. A day or two later they became worse and it was noticed that the toes would become flexed and rigid. He entered a hospital and was treated for several weeks for convulsions. He was finally discharged and remained well until three weeks before admission to the medical service of Roosevelt Hospital. On admission, he stated that he had been having violent convulsions six or eight times each day. His legs and arms were sore from the severity of the muscular contractions. The convulsions would begin by extension of the feet, flexion at the metatarsophalangeal joints, then flexion of the legs upon the thighs and of the thighs on the body. The arms would be flexed at the elbows, and carried across the chest, the fingers flexed at the metatarsophalangeal joints with the thumbs buried in the palms of the hands. The face would be contorted. He would not lose consciousness. After from one to fifteen minutes of these violent tonic contractions he would suddenly relax with a groan, and rub the affected muscles. During the period of relaxation the toes remained spasmodically flexed, and the slightest pressure over the tendons or muscles would excite a renewal of the attack. Although he had no symptoms of digestive disturbance, examination of the gastric contents on several occasions showed considerable dilatation and diminished mobility. After several weeks of careful observation and treatment, during which the convulsions became more frequent and violent, he was transferred to the surgical

division for an exploratory operation, on the theory that the case was one of gastric tetany and that there was some pyloric obstruction, either from spasm, inflammatory induration, a new growth. On operation nothing abnormal was found. The anterior wall of the stomach was opened and two fingers forced through the pylorus to insure its patency.

The convulsions ceased immediately after the operation, and he made a satisfactory convalescence. On getting out of bed, however, he was found to have a more or less complete motor paraplegia. He was unable to walk or even stand, and for several weeks made no effort to get about. On being told that he must either go home or be transferred to Bellevue, he angrily arose and walked out of the hospital. The case was evidently one of grave hysteria, and the improvement due wholly to suggestion.

It will thus be seen that of the five cases which make up Group II, in which no definite anatomical lesion was found at operation, one was a case of locomotor ataxia with gastric crises, one a case of hysterical pseudo-tetany, and the other three can only be classified as examples of a gastric neurosis; and while in two of these cases considerable improvement in the symptoms followed the operation, there is little or no reason to ascribe this improvement to the operative procedures. All must therefore be regarded as failures, at least from a surgical point of view.

Taken as a whole, this series of cases teaches, that if one would obtain the best results in this class of patients, he should limit his operative intervention to cases in which the evidence of a definite anatomical lesion is well nigh conclusive, and I can formulate no better rules for guidance than those laid down in the opening paragraph of this paper.